

ABSTRACT OF THE DISCLOSURE

A process optically transports digital data over an all-optical long-haul communication path. The process includes transporting digital optical data signals at a selected bit rate and a selected wavelength over a sequence of transmission spans. The sequence includes 70 percent or more of the spans of the long-haul all-optical communication path. Each span of the sequence has a primary local maximum optical power point for the wavelength on a transmission fiber and nearest to an input of the span. The transporting causes a cumulative dispersion of each signal to evolve such that residual dispersions per span are positive over some of the spans and are negative over other of the spans. At the primary local maximum power points, magnitudes of cumulative dispersions of the signals in pico seconds per nanometer remain at less than 32,000 times the inverse of the bit rate in giga bits per second.